

CLAIMS

What is claimed is:

1. A method of manufacturing an automotive lamp comprising a lens, a printed circuit board having at least one of LED, and a lamp housing, the method comprising the steps of:
 - a. fixing the lens to the printed circuit board to form a PCB subassembly, the fixed relationship between the lens and the printed circuit board thereby securing a proper alignment between the lens and the at least one LED on the printed circuit board; and
 - b. fixing the PCB subassembly to the lamp housing.
2. The method of claim 1 further comprising the step of fixing the lamp housing to an automobile.
3. The method of claim 1 wherein the lens is fixed to the printed circuit board by first contacting the lens and the printed circuit board such that a plurality of stakes extend through a plurality of associated holes and then melting the plurality of stakes extending through the plurality of holes.
4. The method of claim 3 wherein heat staking is used to melt the stakes.
5. The method of claim 1 wherein the PCB subassembly is fixed to the lamp housing by first contacting the PCB subassembly and the lamp housing such that a plurality of stakes extend through a plurality of associated holes and then melting the plurality of stakes extending through the plurality of holes.
6. The method of claim 5 wherein heat staking is used to melt the stakes.

7. The method of claim 1 wherein the lens is an inner lens, and further comprising the step of securing an outer lens to the lamp housing such that the outer lens covers the inner lens.
8. A method of manufacturing a center high mount stop lamp (CHMSL) comprising the steps of:
 - a. providing an elongated printed circuit board (PCB) with a plurality of LEDs positioned thereon, the PCB including a first plurality of holes;
 - b. providing an elongated inner lens comprising a plurality of prescriptions, each of the plurality of prescriptions associated with one of the plurality of LEDs, the elongated inner lens further comprising a first plurality of stakes and a second plurality of holes;
 - c. providing an elongated lamp housing comprising a second plurality of stakes;
 - d. forming a PCB subassembly by fixing the PCB to the inner lens by inserting the first plurality of stakes on the inner lens through the first plurality of holes on the PCB and melting the first plurality of stakes; and
 - e. fixing the PCB subassembly to the housing by inserting the second plurality of stakes on the lamp housing through the second plurality of holes on the inner lens and melting the second plurality of stakes.
9. The method of claim 8 wherein the first plurality of stakes and second plurality of stakes are melted using a heat staking process.

10. The method of claim 8 wherein the PCB subassembly is inserted into an elongated channel on the lamp housing when the PCB subassembly is fixed to the housing.
11. A center high mount stop lamp (CHMSL) comprising:
 - a. an elongated printed circuit board (PCB) having a plurality of LEDs positioned thereon;
 - b. an elongated inner lens comprising a plurality of prescriptions, each of the plurality of prescriptions associated with one of the plurality of LEDs positioned on the PCB;
 - c. a first plurality of stakes extending exclusively between the PCB and the inner lens, the first plurality of stakes fixing the PCB to the inner lens;
 - d. an elongated lamp housing connected to the inner lens;
 - e. a second plurality of stakes extending between the inner lens and the lamp housing, the second plurality of stakes fixing the inner lens to the lamp housing.
12. The CHMSL of claim 11 wherein the first plurality of stakes are positioned on the inner lens and extend through holes in the PCB.
13. The CHMSL of claim 11 wherein the second plurality of stakes are positioned on the lamp housing and extend through holes in the inner lens.
14. The CHMSL of claim 11 wherein the lamp housing further comprises a channel and the inner lens and PCB are positioned in the channel.
15. The CHMSL of claim 11 wherein the inner lens comprises a first plurality of tabs and the first plurality of stakes extend from the plurality of tabs.

16. The CHMSL of claim 11 wherein the first plurality of stakes are capped as the result of a heat stake process.
17. The CHMSL of claim 11 wherein the second plurality of stakes are capped as the result of a heat stake process.
18. The CHMSL of claim 11 wherein the first plurality of stakes are screws.
19. The CHMSL of claim 11 wherein the second plurality of stakes are screws.